

**REMARKS**

**Summary of the Office Action**

Claims 1, 2, 10, and 11 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Takahashi (JP 5-249422).

Claims 1, 3, 10, 12, 13, and 21 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Matsushima (US 6,391,137).

Claims 1, 3, 10, 12, 13, and 21 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Shin et al. (US 6,197,209).

Claims 1, 3-10, 12-14, and 16-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's Disclosed Prior Art in view of Matsushima.

Claims 14 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi in view of Applicant's Disclosed Prior Art.

**Summary of the Response to the Office Action**

Applicant has amended claims 1, 10, and 14 to further define the invention. Accordingly, claims 1-21 are pending for further consideration.

**All Claims Define Allowable Subject Matter**

Claims 1, 2, 10, and 11 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Takahashi (JP 5-249422), claims 1, 3, 10, 12, 13, and 21 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Matsushima (US 6,391,137), claims 1, 3, 10, 12, 13, and 21 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Shin et al. (US 6,197,209), claims 1, 3-10, 12-14, and 16-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over

Applicant's Disclosed Prior Art in view of Matsushima, and claims 14 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi in view of Applicant's Disclosed Prior Art. Applicant traverses these rejections for at least the following reasons.

Independent claims 1, 10, and 14, as amended, all recite, in part, steps of "cleaning exposed surfaces of the bonded upper and lower substrates to remove foreign materials formed thereon during said steps." In contrast to Applicant's claimed invention, Takahashi, Matsushima, and Shin et al. all teach only etching substrate surfaces for the purpose of reducing a thickness of the substrates. With regard to Shin et al., Applicant respectfully submits that FIG. 5 of Shin et al. merely shows performing a cleaning step after etching steps. Thus, according to Takahashi, Matsushima, and Shin et al., contaminants are not necessarily removed from surfaces of the substrate by cleaning prior to etching of the substrates.

According to Applicant's present invention (see paragraphs [0011] to [0015]), a cleaning step is preformed prior to an etching step. Thus, any contaminants resulting from formation of organic insulating layers on the substrates are removed before the etching of the substrates, thereby preventing degradation of optical properties of the substrates. For example, Applicant's present invention prevents formation of stains on the liquid crystal display panel that may be created if the substrates are not uniformly etched as a result of the contaminants remaining on surfaces of the substrates. In other words, any organic contaminants remaining on the surfaces of the substrates prior to etching may function as a mask during the etching process, thereby forming projections on the etched surfaces of the substrates and producing the stains on the liquid crystal display panel.

According to Applicant's claimed invention, with respect to independent claim 1, a method includes a step of "cleaning exposed surfaces of the bonded upper and lower substrates to remove foreign materials formed thereon during said steps" of preparing and bonding of the upper and lower substrates. Similarly, with respect to independent claim 10, a method includes a step of "cleaning exposed surfaces of the bonded upper and lower substrates to remove foreign materials formed thereon during said steps" of bonding of the upper and lower substrates. Likewise, with respect to independent claim 14, a method includes a step of "cleaning exposed surfaces of the bonded upper and lower substrates to remove foreign materials formed thereon during said steps" of forming a gate electrode, forming a gate insulating film, forming an active layer, forming a source electrode and a drain electrode, and bonding upper and lower substrates.

Applicant respectfully asserts that Takahashi, Matsushima, and Shin et al. are all completely silent with respect to a method including a step of cleaning surfaces of the substrates prior to etching of the substrate surfaces. Moreover, Applicant respectfully submits that the Office Action's allegation that "[i]t is inherent that there is at least some type of impurity on the exposed surfaces, and that impurity will be removed when the surface upon which it resided is removed" is not necessarily true all of the time, and thus, not "inherent." As detailed above, not all organic contaminants/impurities/foreign materials remaining on surfaces of the substrates prior to etching may be removed during the etching process. Thus, the organic contaminants/impurities/foreign materials remaining on surfaces of the substrate may function as masks, thereby producing projections extending from the etched surfaces of the substrates.

Thus, for at least the reasons set forth above, Applicant respectfully submits that Takahashi, Matsushima, and Shin et al., either taken singly or in combination, fail to teach or suggest every step recited by independent claims 1, 10, and 14, and hence dependent claims 2-9, 11-13, and 15-20. Accordingly, Applicant respectfully submits that claims 1-21 are neither taught nor suggested by any of the applied prior art references, whether taken alone or in combination. Applicant respectfully asserts that the rejections under 35 U.S.C. §§ 102 and 103 should be withdrawn because the above-discussed novel combinations of features are neither taught nor suggested by any of the applies references, whether taken alone or in combination.

### **CONCLUSION**

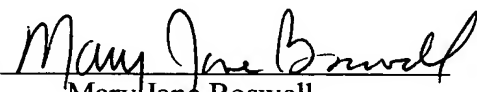
In view of the foregoing, Applicant respectfully requests entry of the amendments, reconsideration and the timely allowance of all pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicant's undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under

37 C.F.R. § 1.136 not accounted for above, such as an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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